CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	**South Ave Bridge Boring-Bitterroot River - Navigable Water Land Use License**
Proposed Implementation Date:	**December 12, 2016**
Proponent:	**Tetra Tech Project LLC**
Location:	**SE4SE4 of Section 27, T13N-R20W**
County:	**Missoula**

I. TYPE AND PURPOSE OF ACTION

DNRC has received an application for a short duration land use license (12/12/16 – 1/31/17) for geotechnical sampling of soil materials under the Bitterroot River for a proposed bridge. Actual in-stream boring is not expected to take more than 3-5 days. This project proposal involves a footprint of less than one acre of State-owned property below the low water mark of the river.

Tetra-Tech is proposing to drill two geotechnical borings in the Bitterroot River for design of a proposed new County bridge connecting to South Avenue in Missoula. The test borings will be done with a track mounted auger and internal drill stem with split spoon sampler. The operation would involve equipment operating in the river to access bore holes and the boring of two holes to an approximate depth of 110 feet below ground level while in about 1.5 - 2 feet of water. Bore holes would be located at the approximate site of proposed bridge bents in the Bitterroot River. The project is located in the SE4SE4 of Section 27, T13N-R20W which is on the southwestern outskirts of Missoula.

Montana Code (MCA 70-16-201) provides for state ownership from the low water mark to the low water mark on navigable water bodies. Based on historical evidence the Bitterroot River is commercially navigable from the mouth of Jenning's Camp Creek on the east fork (SW1/4, Sec.27, T2N-R18W) to its confluence with the Clark Fork River. Therefore, the state claims ownership of the riverbed below the low water mark between these two points.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:
Provide a brief chronology of the scoping and ongoing involvement for this project.

Montana DNRC, Montana Fish Wildlife & Parks, US Army Corps of Engineers, Montana Dept. of Environmental Quality, and Missoula County have been involved in the review of this geotechnical drilling proposal. This drilling is a preliminary component part of the Missoula County's proposed South Avenue Bridge project. The South Avenue Bridge project has a long and ongoing history of planning and public involvement. For more information see http://www.southavenuebridge.com/

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Montana Department of Fish Wildlife & Parks -124 Permit; US Army Corps of Engineers – possible 404 permit; Montana Department of Environmental Quality – possible 318 Authorization; and Montana Department of Natural Resources and Conservation – Navigable Water Land Use License.

3. ALTERNATIVES CONSIDERED:

No Action Alternative:
Do not grant a Land Use License for proposed geophysical testing of soil materials under the Bitterroot River.

Action Alternative:
Grant a Land Use License for geophysical testing of soil materials under the Bitterroot River as proposed.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:
Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

Existing Conditions: Soils are stratified mixed alluvial deposits of sand and gravel at the proposed drilling sites that provides a relatively stable base for operations. Subsurface drilling may encounter finer textured clay and silt deposits. No unique or unusual geologic features occur at the project site.

No-Action: None

Action Alternative: Minor Effects Equipment mobilization would be completed on mainly frozen soils, and low to moderate disturbance is expected in the track. Disturbance may require reshaping to approximate initial ground and channel profile conditions. The operator is responsible for implementing on-site erosion control measures to minimize disturbance, erosion and potential sedimentation. Based on the proposed plan, using track mounted equipment, there is low to moderate risk of direct and indirect soil impacts, and low cumulative effects on the small footprint area of the test boring.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:
Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

Existing Conditions: This portion of the Bitterroot River has a water quality classification standard of B-1. Waters classified B-1 are to be maintained suitable for drinking, culinary, and food processing purposes, after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

No Action: None No changes to water quality would occur.

Action Alternative: Minor and short term effects. The core driller would use an auger and high tub to contain drilling mud that may run off the auger or drilling equipment but all efforts would be made to minimize sedimentation. The minor sedimentation would be small in area and clear up quickly in

several hours based on comparable projects and turbidity would have minor direct or indirect effect to water quality and no cumulative effects. The proposed action would be done in compliance with water quality permitting regulations as well as any mitigation recommended by Montana Fish, Wildlife and Parks through their implementation of the Montana Stream Protection Act (SPA 124).

6. AIR QUALITY:

What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

None - Some temporary emission releases would be expected during construction activities; however, air quality is not expected to be impacted to any measurable degree with either alternative.

7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

Existing Conditions: At the proposed drilling site, the river banks slope back up to about to 5 feet height and support mixed shrubs, forbs and grasses. The channel bed is mainly bare sands and gravels below the high water mark.

No-Action: **None** No disturbance to vegetation would occur.

Action Alternative: Minor Soil and vegetation disturbance would be slight with the mobilization of the track mounted core driller. Noxious weed infestations are located on upper riverbanks and outside the DNRC ownership. No aquatic weeds are identified. No change in effects to DNRC ownership.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

Terrestrial and Avian Existing Conditions: Limited habitats for terrestrial wildlife exist in the DNRC-managed portion of the project area. Some use of the DNRC-managed project area by aquatic mammals, birds, and amphibians is possible. Surrounding uplands and riparian habitats support a variety of wildlife species.

No-Action: No disturbance to terrestrial wildlife would occur. No changes to existing habitats would be anticipated. Collectively, no effects to terrestrial wildlife would be anticipated.

Action Alternative: Some short-duration disturbance to terrestrial wildlife could occur, but would occur during a time period when a number of wildlife species would not be using the vicinity. No appreciable changes to existing habitats in the DNRC-managed project area would be anticipated; some disturbance would be possible to terrestrial habitats on other ownerships in the vicinity, which could negligibly affect terrestrial wildlife. Collectively, negligible effects to terrestrial wildlife in the DNRC-managed project area would be anticipated.

Fisheries Existing Conditions: Bull trout is a federally threatened species and occurs in the Bitterroot River and may use this reach of the river. Westslope cutthroat trout is considered a sensitive species and also occurs within this river reach, along with other native and non-native fish species.

No Action: None No changes to existing fisheries would occur.

Action Alternative: No effects would occur to stream shading or large woody debris. As noted in the water quality section, the core driller would use an auger and high tub to contain drilling mud that may run off the auger or drilling equipment but all efforts would be made to minimize sedimentation. The minor sedimentation would be small in area and clear up quickly in several hours based on comparable projects and turbidity would have no measurable direct, indirect or cumulative effects to fisheries habitat or fisheries.

---

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

Terrestrial and Avian Existing Conditions: Limited habitats for terrestrial wildlife exist in the DNRC-managed project area. The project area is roughly 1.3 miles from the nearest bald eagle nest; some potential bald eagle foraging habitat exists in the DNRC-managed project area. Otherwise habitats for other threatened, endangered, or sensitive terrestrial wildlife species does not exist in the DNRC-managed project area. Surrounding uplands and riparian habitats on other ownerships likely support a variety of wildlife species, including common species as well as less common species such as great blue herons, yellow-billed cuckoos, bald eagles, and pileated woodpeckers. Proximity to numerous forms of human disturbance likely limits some wildlife use of the vicinity.

No-Action: No disturbance to terrestrial and avian wildlife would occur. No changes to existing habitats would be anticipated. Collectively, no effects to terrestrial and avian wildlife would be anticipated.

Action Alternative: Some short-duration disturbance to terrestrial and avian wildlife could occur. No appreciable changes to existing habitats on the DNRC-managed project area would be anticipated, some disturbance to terrestrial and avian habitats on other ownerships would be possible. Activities would be conducted during the non-nesting period for bald eagles, so no effects to nesting bald eagles would be anticipated. Collectively, negligible effects to terrestrial and avian threatened, endangered, or sensitive wildlife species would be anticipated.

Fisheries Existing Conditions: Bull trout is a federally threatened species and occurs in the Bitterroot River and may use this reach of the river. Westslope cutthroat trout is considered a sensitive species and also occurs within this river reach along with other native and non-native fish species.

No Action: None No changes to existing fisheries would occur.

Action Alternative: No effects would occur to stream shading or large woody debris. As noted in the water quality section, the core driller would use an auger and high tub to contain drilling mud that may runoff the auger or drilling equipment but all efforts would be made to minimize sedimentation. The minor sedimentation would be small in area and clear up quickly in several hours based on comparable projects and turbidity would have no measurable effect to fisheries habitat or fisheries.

Wetlands: No wetlands are identified on the proposed access routes on the river bank edge, therefore no impacts would be anticipated from selection of either alternative.

---

10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

None - Because only the bed of the Bitterroot River is state-owned land in the project's area of potential effect, there are no cultural resource concerns. Selection of either alternative would have no effect to state owned heritage properties as defined in the State Antiquities Act.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

None – Because the state ownership lies below the low water mark of the river and minimal ground disturbance to the river bed is anticipated with use of tracked equipment, no impacts to aesthetics are anticipated with selection of either alternative.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

None – No impacts are anticipated to land, water, air or energy resources from selection of either alternative

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

The Action Alternative is to conduct geophysical test boring on land under the Bitterroot River to provide information for the design of a potential new Missoula County bridge connecting to South Avenue in Missoula. The South Avenue Bridge project has a long and ongoing history of planning and public involvement. For more information see http://www.southavenuebridge.com/.

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

No Action Alternative: None

Action Alternative: Minor – Work would be done in compliance with existing safety standards and permitting requirements including those of the Department of Fish Wildlife and Parks. Temporary in-stream operations would occur in a relatively short (3-5 day) time frame during the months of December and/or January and would not pose an impediment to navigability or a safety hazard to boating or floating on the river.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

None – No change in commercial and Agricultural Activities and Production are expected with selection of either alternative.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

No Action Alternative: None

Action Alternative: Minor - The proposed project would be anticipated to provide a short-term employment opportunity for a small crew of people while construction and data analysis activities occur.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

None - No change in tax base and tax revenues are anticipated with selection of either alternative

18. DEMAND FOR GOVERNMENT SERVICES:

Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

None – The proposed action is to collect information. No change in the demand for government services are anticipated with selection of either alternative.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

Missoula County in concert with the Montana Department to Transportation is in the process of studying the merits of a new bridge to replace the single lane Maclay Bridge. The proposed geotechnical borings are to collect information for this study.

In addition to requesting a land use license from DNRC, the applicant has requested a 124 permit (Stream Protection Act) from the Montana Department of Fish Wildlife & Parks, as well as potential authorizations from the US Army Corps of Engineers (placement of fill within waters of the USA) and the Montana Department of Environmental Quality (318 Permit - Short Term Exemption to Montana Water Quality Standards).

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

None - Selection of either alternative would not affect access to, and quality of recreational and wilderness activities.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

None – No change in the density and distribution of population and housing would occur with selection of either alternative.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

None – No change to social structures and mores would occur with selection of either alternative.

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

None - No change to cultural uniqueness and diversity would occur with selection of ether alternative

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

No Action: No revenue would be generated by this alternative

Action: Granting of the proposed land use license would return approximately $150 to the Public Land- Navigable Rivers trust.

EA Checklist Prepared By:	**Name:**	Robert H Storer	**Date:**	12/7/2016
	Title:	SWLO Trust Lands Program Manager		

V. FINDING

25. ALTERNATIVE SELECTED:

I select the Action Alternative; granting a Land Use License for geotechnical soil borings involving less than 1 acre of State-owned property below the low water mark of the Bitterroot River, thereby accommodating information gathering needed for the design of a proposed new County bridge connecting to South Avenue in Missoula. The test borings would be done with a track mounted auger and internal drill stem using drilling mud as necessary, and collecting samples with split spoon sampler. The operation would involve equipment operating in the river to access bore holes and the boring of two holes to an approximate depth of 110 feet below ground level while in about 1.5 - 2 feet of water.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Implementation of the Action Alternative will not result in significant environmental impacts.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

	EIS		More Detailed EA	**X**	No Further Analysis

EA Checklist Approved By:	**Name: Jonathan Hansen** **Title: Missoula Unit Manager**	
Signature:	/s/ Jonathan Hansen	**Date**: December 8, 2016

FIGURE 1 – Access Route and Proposed Drill Sites

FIGURE 2 – Cross-Section and Profile of Proposed Drilling Sites